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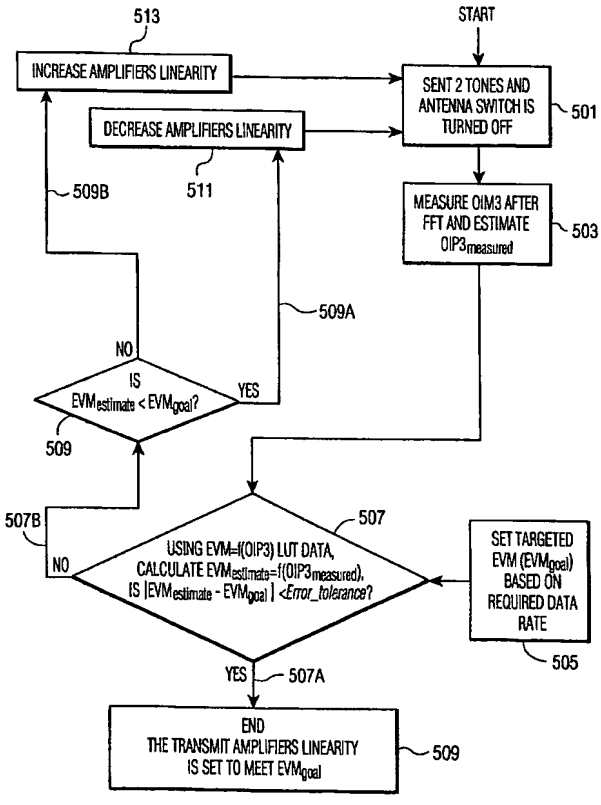
(54) Title: DISTORTION/EFFICIENCY ADAPTATION IN A VARIABLE-DATA-RATE RADIO TRANSMITTER



(57) Abstract: The present invention generally speaking, provides for adaptive control of an RF power amplifier in view of a desired data rate. For low data rates, the RF amplifier (121) is controlled so as to allow significant output signal distortion, at the same time operating within a region of increased efficiency of the RF power amplifier. For higher data rates, the RF amplifier (121) is controlled so as to reduce the output signal distortion. During such times, lower efficiency of the RF power amplifier is attained. Efficiency of the RF power amplifier (121) is thus maximized in view of data rate requirements. In the case of battery-powered radio transmitter, increased efficiency results in longer battery life. In a specific embodiment, an on-the-fly calibration is performed in which output signal distortion is measured. A precalculated table stores information relating output signal distortion to expected Error Vector Magnitude (EVM) at the radio receiver.

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